

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Rhoads et al

Art Unit 2131

Application No.: 09/531,076

Confirmation No. 5497

Filed: March 18, 2000

For: SYSTEM FOR LINKING FROM OBJECTS
TO REMOTE RESOURCES

VIA ELECTRONIC FILING

Examiner: S. Zia

Date: May 17, 2007

SUBSTITUTE APPEAL BRIEF (SECOND)

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Sir:

This brief is responsive to the Notice of Non-Compliant Appeal Brief dated May 2, 2007, and is in furtherance of the Notice of Appeal filed September 12, 2006, and the Notice of Panel Decision from Pre-Appeal Brief Review dated January 29, 2007.

(Note that this is the second appeal filed in this case. A first Notice of Appeal was filed in June 2004, and the Examiner re-opened prosecution following submission of Appellant's Appeal Brief.)

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I. REAL PARTY IN INTEREST

The real party in interest is Digimarc Corporation, by an assignment from the inventors recorded at Reel 11014, Frames 559-563, on July 21, 2000.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

Claims 1, 3-5 and 17-31 stand repeatedly rejected and are appealed. (Claims 2 and 6-16 are canceled.)

IV. STATUS OF AMENDMENTS

All earlier-filed amendments have been entered.

V. BACKGROUND AND SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to linking from objects to associated remote resources.¹ (“Objects” include magazines and other printed media,² together with electronic media.³ “Remote resources” include web pages and other sources of online data.⁴)

This basic field has old antecedents. A rudimentary example is a grocery scanner, which reads a barcode from a can of vegetables, and looks-up (links to) an associated price record in an electronic database.

¹ See, e.g., specification, page 1, lines 16-17.

² See, e.g., specification, page 1, line 26; page 4, lines 4-5.

³ See, e.g., specification, page 4, lines 1-3; page 31, lines 1-19.

⁴ See, e.g., specification, page 1, line 30.

The present assignee markets a technology under the trademark MediaBridge (originally termed “Bedoop”) in which digital watermarks are used to mark the objects.⁵ Watermarks are desirable for a number of reasons, including their applicability to both physical and electronic objects, and their human imperceptibility (e.g., digital watermarks don’t require the dedicated “real estate” of a bar code, and don’t interrupt the visual aesthetic of a printed design with a stark black and white data symbology).

By way of background, Appellants note that digital watermarking technology (also known as steganography) encompasses a great variety of techniques by which plural bits of digital data are hidden in some other object, without leaving human-apparent evidence of alteration or data representation. Thus, a photograph in a magazine advertisement can be digitally watermarked to convey a plural-bit digital payload. The photograph looks essentially pristine to a human viewer, but a device that includes a web cam (or other image sensor) and a suitably-programmed processor can decode the plural-bit payload from image data sensed from the printed page.⁶

Digital watermarks can take many forms - several are detailed in patent documents incorporated-by-reference in the present specification.⁷ One form of digital watermarking favored by the present Appellants involves making subtle changes to the luminance of pixels comprising a printed photograph or other graphic to thereby encode a hidden multi-bit auxiliary data payload. The changes are too slight to be perceptible to human viewers.⁸ But when such a watermark-encoded graphic is captured and computer analyzed, the multi-bit payload can be recovered, and a corresponding action can be triggered thereby (e.g., web page loading).⁹

When digitally watermarking a blank substrate – such as unprinted paper – there is no graphic to subtly change. In such cases, digital watermarking can still be effected, e.g., by depositing tiny speckles of ink to give the paper a slight tint.¹⁰ Again, the droplets of ink define

⁵ See, e.g., incorporated-by-reference application 60/164,619 at page 1, lines 3-6.

⁶ See, e.g., specification, page 4, lines 18-22.

⁷ See, e.g., specification, page 1, lines 6-13; page 3, lines 15-23; and the incorporation by reference language found at page 43, lines 13-15.

⁸ See, e.g., incorporated-by-reference application 09/503,881 cited at page 3, line 18 (now patent 6,614,914).

⁹ See, e.g., specification, page 1, lines 25-30.

¹⁰ See, e.g., specification, incorporated-by-reference application 09/343,104 at page 18, lines 26-31.

a pattern that can be sensed by a compliant decoder, and the multi-bit data can be decoded therefrom. Alternatively, another way to digitally watermark a blank substrate is to create a subtle texture pattern on its surface. The micro-topological features of the texture appear substantially uniform to human inspection, but analysis of scan data corresponding thereto reveals deliberate patterning that encodes the multi-bit auxiliary data.¹¹

The assignee's MediaBridge technology finds numerous applications.¹² One is linking from printed magazine pages (or newspaper pages, catalog pages, etc.) to associated internet web pages,¹³ e.g., through use of a camera- and browser-equipped cell phone.¹⁴ Thus, a consumer can show a magazine picture of a vacation resort to the cell phone, and the cell phone can respond by loading the web page of the depicted resort.

Although powerfully versatile, digital watermarks present some particular challenges. One is that imperceptibility of the watermark lessens with longer payloads. Accordingly, it is desirable to keep the encoded data payload small to keep the watermark imperceptible. Instead of encoding a lengthy URL as a watermark payload (such as <http://marriott.com/property/propertyPage.mi?marshaCode=HNLMC> for the Waikoloa Marriot), it is generally preferable to encode a short identifier (such as 97AE2B) instead. When decoded, this identifier can be passed to a remote server and used as an index to look-up the corresponding (lengthy) URL in a database. This URL is then returned to the browser of the originating device (e.g., cell phone) for linking purposes.¹⁵

To be commercially successful, the time between the moment the cell phone captures the image data, and the moment the corresponding web page is finally loaded, should be as short as possible. (This is sometimes termed "response latency.") In cases where the watermark payload is an indexing identifier rather than a URL, response latency is largely dependent on the time required to (1) transmit the decoded identifier to the remote server, (2) look-up the corresponding

¹¹ See, e.g., incorporated-by-reference application 09/503,881 (cited at page 3, line 18), now patent 6,614,914, at col. 1, lines 64-67. See also incorporated-by-reference application 09/343,104 at page 22, lines 23-25.

¹² Many of these applications are detailed in commonly-owned applications incorporated-by-reference in the present specification. See, e.g., application 09/343,104, cited at page 1, line 7, and incorporated-by-reference at page 43, lines 13-15.

¹³ See, e.g., specification, page 1, line 25 through page 2, line 4.

¹⁴ See, e.g., specification, page 3, lines 27.

URL in the remote database; and (3) transmit the corresponding URL back to the originating cell phone.

In accordance with one aspect of the present invention,¹⁶ response latency is improved by anticipating an object that may be presented for decoding in the future, based on an object presented in the past. URL information for the anticipated object can then be provided to the cell phone from the database, and cached locally in the phone – eliminating the need for the above-described communications if the anticipated item is, indeed, presented.¹⁷

Consider, for example, a magazine containing watermarked advertising. If the user presents an advertisement to the cell phone, the watermark is decoded and forwarded to the remote server database, which responds with a URL corresponding to that ad. The cell phone browser then initiates a link to that internet address. Now the remote server knows what magazine the user is reading. By reference to the watermark first received, the remote server may discern, for example, that the user is reading the San Francisco edition of the March 14, 2000, *Time* magazine, and just looked at page 85. Based on this information the remote server can anticipate that the user may soon present other advertisements from the same issue. The server can then query the database for URLs associated with other advertising in that issue. (The server is organized to permit these other ads, and their watermarked identifiers, to be determined.¹⁸) These URLs are passed back to the cell phone. If the user next presents an advertisement from page 110 to the phone, the phone finds it already has the corresponding URL locally cached. The phone's browser initiates the link immediately, obviating a data round trip between the application and the remote system.¹⁹

This arrangement can be optimized in a variety of ways. One is to first send URLs corresponding to pages that are next-expected to be encountered. For example, if the user just presented page 85 to the phone, after sending the URL for that page, the remote server could next send the URLs associated with pages 86, 87, etc. On sending the URL for the last page of

¹⁵ See, e.g., specification, page 5, lines 21-24.

¹⁶ See, e.g., claims 1 and 17.

¹⁷ See, e.g., specification, page 19, lines 27-30.

¹⁸ See, e.g., specification, page 20, lines 9-11.

¹⁹ See, e.g., specification, page 20, lines 1-16.

the magazine (typically the rear cover), the handler could start from the beginning (typically the front cover) and send further URLs up to that for page 84. Another approach is to first cache URLs for the most conspicuous ads, e.g., first send URLs for any 2-page spread ads, then for each full page add, then for each successively smaller fractional-page ad. Still another approach is for the remote server to dispatch URLs to the phone for caching in accordance with a contractually-agreed priority. One advertiser, for example, may pay a premium ad rate in exchanged for being cached before other advertisers who don't pay the premium. Other caching priorities, and combinations of such priorities, can naturally be employed.²⁰

Through use of systems according to this aspect of the invention, response latency is decreased, and consumer satisfaction is enhanced.

Exemplary (not exhaustive) page/line support for elements of independent claims 1 and 17 is detailed in the footnotes which annotate these claims:

1. A method comprising:

*sensing an object identifier from a first object;*²¹

*sending said first object identifier from a first device to a second device;*²²

*in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;*²³

*initiating a link from the first device in accordance with said address information;*²⁴

*at said second device, identifying additional objects related to said first object but not having the same object identifier sent from the first device to the second device; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;*²⁵

²⁰ See, e.g., specification, page 20, lines 17-29.

²¹ See, e.g., Fig. 2, element 20; Fig. 3, element 22; specification, page 1, lines 25-28; page 4, lines 1-29.

²² See, e.g., Figs. 2-3, element 32; specification, page 5, lines 5-7.

²³ See, e.g., specification, page 5, lines 16-22.

²⁴ See, e.g., specification, page 5, lines 23-24.

²⁵ See, e.g., specification, page 19, line 27 – page 20, line 11. (Each object identifier is associated with a destination chosen by the producer of the print media, per page 1, lines 27-29. A Nike ad will inherently have a

storing said additional address information in a memory at the first device,²⁶ wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.²⁷

17. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object,²⁸ querying a database with at least some of said payload data to obtain address information associated with said physical object,²⁹ and initiating an electronic link based on said obtained address information,³⁰ an improvement comprising foreseeing information about object payloads that may be forthcoming but that do not share with the first object the payload data with which the database was queried, and anticipatorily sending address information associated with such foreseen object payloads.³¹

A second aspect of the invention³² comprises a method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information. This aspect is further characterized by foreseeing information about object payloads that may be forthcoming, and anticipatorily sending address information associated with such foreseen object

different destination than a Reebok or Marriot ad. Thus, the ads require different identifiers.)

²⁶ See, e.g., specification, page 20, lines 11-12.

²⁷ See, e.g., specification, page 20, lines 12-16.

²⁸ See, e.g., specification, page 4, lines 1-29; Figs. 2 and 3.

²⁹ See, e.g., specification, page 5, lines 5-7 and 16-20; Fig. 4.

³⁰ See, e.g., specification, page 5, lines 21-24.

³¹ See, e.g., specification, page 19, line 27 – page 20, line 11. (Again, each object identifier is associated with a destination chosen by the producer of the print media, per page 1, lines 27-29. A Nike ad will inherently have a different destination than a Reebok or Marriot ad. Thus, the ads require different identifiers.)

³² See, e.g., independent claims 23, 24.

payloads after initiating the electronic link.³³

Exemplary (not exhaustive) page/line support for elements of independent claims 23 and 24 is detailed in the footnotes which annotate that claim:

23. A method comprising:

sensing an object identifier from a first object;³⁴

sending said first object identifier from a first device to a second device;³⁵

in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;³⁶

initiating a link from the first device in accordance with said address information;³⁷

at said second device, after initiating said link, identifying additional objects related to said first object; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;³⁸

storing said additional address information in a memory at the first device;³⁹

wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.⁴⁰

24. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable

³³ See, e.g., specification page 20, lines 1-16.

³⁴ See, e.g., Fig. 2, element 20; Fig. 3, element 22; specification, page 1, lines 25-28; page 4, lines 1-29.

³⁵ See, e.g., Figs. 2-3, element 32; specification, page 5, lines 5-7.

³⁶ See, e.g., specification, page 5, lines 16-22.

³⁷ See, e.g., specification, page 5, lines 23-24.

³⁸ See, e.g., specification, page 19, line 27 – page 20, line 11.

³⁹ See, e.g., specification, page 20, lines 11-12.

⁴⁰ See, e.g., specification, page 20, lines 12-16.

feature associated with a physical object,⁴¹ querying a database with at least some of said payload data to obtain address information associated with said physical object,⁴² and initiating an electronic link based on said obtained address information,⁴³ an improvement comprising foreseeing information about object payloads that may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads after initiating said electronic link.⁴⁴

In a related arrangement⁴⁵ the improvement includes foreseeing the *order* in which the other object payloads may be forthcoming. The method then anticipatorily sends address information for such foreseen object payloads *in that order*.⁴⁶

Exemplary (not exhaustive) page/line support for elements of independent claim 30 is detailed in the footnotes which annotate that claim:

30. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object,⁴⁷ querying a database with at least some of said payload data to obtain address information associated with said physical object,⁴⁸ and initiating an electronic link based on said obtained address information,⁴⁹ an improvement comprising foreseeing information about object payloads that may be forthcoming, and the order in which said other object payloads may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads, in such order.⁵⁰

⁴¹ See, e.g., specification, page 4, lines 1-29; Figs. 2 and 3.

⁴² See, e.g., specification, page 5, lines 5-7 and 16-20; Fig. 4.

⁴³ See, e.g., specification, page 5, lines 21-24.

⁴⁴ See, e.g., specification, page 19, line 27 – page 20, line 11.

⁴⁵ See, e.g., independent claim 30.

⁴⁶ See, e.g., specification page 20, lines 17-21.

⁴⁷ See, e.g., specification, page 4, lines 1-29; Figs. 2 and 3.

⁴⁸ See, e.g., specification, page 5, lines 5-7 and 16-20; Fig. 4.

⁴⁹ See, e.g., specification, page 5, lines 21-24.

Another aspect of the invention (defined by independent claim 3) concerns a system for linking from physical or digital objects, to corresponding resources.

Support for the elements of claim 3 is found in Fig. 2, and in the section of the Detailed Description beginning at page 3, line 24.

More particularly, such a system includes a registration means (19), an originating device means (12), a routing means (14), and a product handler means (16). Footnotes in the following discussion identify exemplary (not exhaustive) specification support.

The registration means can be a server computer⁵¹ that receives data relating to an object (e.g., a printed advertisement, 20), including its identity and its owner. The registration means associates this information in a database (17) with data relating to a corresponding response.⁵²

The originating device means can take many different forms, e.g., a cell phone, a personal digital assistant (e.g., a Palm Pilot), a personal computer, a barcode scanning system, etc.⁵³ This originating device means senses data from an input object, processes same, and forwards same to the routing means.⁵⁴

The routing means can be a computer.⁵⁵ The routing means essentially serves as a middleman between the originating device means 12 and the product handler means 16. The routing means receives requests from the originating device means, logs information re same, and then forwards the requests to an appropriate product handler means.⁵⁶

The product handler means also can be a computer.⁵⁷ This product handler means provides a response to the originating device means, in accordance with information provided thereto by the routing means.⁵⁸

These elements cooperate to form a system that enables linking from physical or digital objects, to corresponding digital resources.

⁵⁰ See, e.g., specification, page 19, line 27 – page 20, line 11; page 11, lines 17-22.

⁵¹ Element 19, Fig. 2; see also specification at page 12, line 25 through page 13, line 2.

⁵² See, e.g., specification, page 13, lines 7-19; page 14, lines 7-8.

⁵³ See, e.g., specification, page 3, lines 27-30.

⁵⁴ See, e.g., specification, page 4, lines 7-17; page 5, lines 5-8.

⁵⁵ See, e.g., specification, page 5, lines 9-10.

⁵⁶ See, e.g., specification, page 5, lines 12-15.

⁵⁷ See, e.g., specification, page 6, lines 15-16.

⁵⁸ See, e.g., specification, page 5, lines 21-22.

(It will be recognized that the examples given in the foregoing discussion are illustrative and not limiting of the scope of the invention. Certain of the claims, for example, are not limited to printed (physical) media objects,⁵⁹ and the encoding is not limited to digital watermarks.⁶⁰)

VI. **GROUNDΣ OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 28 and 31 stand rejected under § 112, para. 1, as failing to comply with the enablement requirement.

All pending claims stand rejected as obvious over Hudetz (5,978,773) in view of Philyaw (6,337,986).

VII. **ARGUMENT**

1. **§ 112**

Claims 28 and 31 stand rejected under § 112, para. 1, as allegedly failing to comply with the enablement requirement.

The Office asserts that the term “a bound volume” is not described in the disclosure.⁶¹

During prosecution, Appellants repeatedly noted that the claim term is supported by the specification’s use of the terms “book” and “magazine” (see, e.g., specification page 3, line 2) – both of which are “bound volumes.” Yet the Office maintained the rejection.

The Board is thus called-on to determine whether the reference to “book” and “magazine” meets § 112 enablement requirements for the claim term “a bound volume.”

⁵⁹ See, e.g., claim 1.

⁶⁰ See, e.g., claim 1 and specification, page 3, lines 9-14.

⁶¹ June 15, 2006, Rejection, page 2, last two lines.

2. Review of Cited Art

The primary reference, Hudetz, discloses a method for linking to on-line product information from physical products. The method starts by obtaining identifier information from a product of interest (e.g., a can of soup). This identifier information can be obtained by scanning a UPC barcode on the product using a barcode reader (obtaining 10 digits of data: 5 digits of UPC-A data, and 5 digits of UPC-B data), or, alternatively, a user can enter some or all of the barcode data manually, e.g., by a keyboard.⁶²

Hudetz's system passes this identifier information to a database. The database returns to the originating system a hypertext document that includes data from all database records which match the input identifier information.⁶³ Each record includes a URL and associated text.⁶⁴ This information is displayed to the user on a screen, and the user can click on a displayed URL to navigate to a desired web page.⁶⁵

If the barcode data is captured by a scanner, all 10 digits will generally be entered.⁶⁶ If entered manually, the user may type just the first 5 digits (UPC-A).

In this latter case, the database may find several matching records. For example, all soups marketed by Campbells may "match" the entered 5-digit UPC-A code. This is shown in Hudetz's Figs. 4 and 5 - three "matching records" from the database of Fig. 4 (with three URLs) are returned in response to the UPC-A identifier "31251"⁶⁷:

⁶² Hudetz, col. 8, lines 32-37.

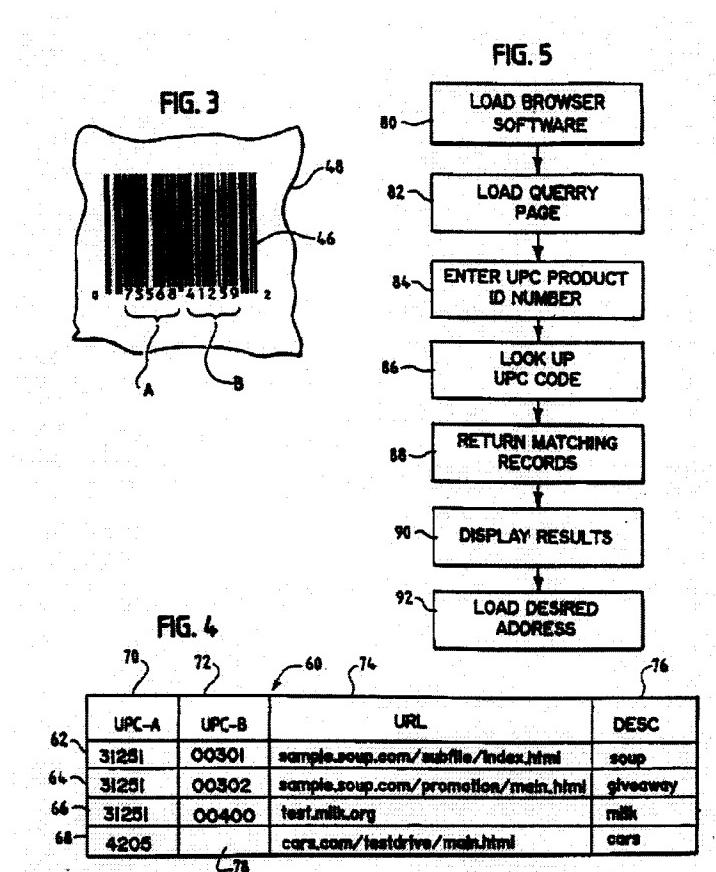
⁶³ Hudetz, col. 8, lines 43-49.

⁶⁴ Hudetz, Fig. 4.

⁶⁵ Hudetz, col. 19, lines 5-21.

⁶⁶ Hudetz, col. 8, lines 42-43.

⁶⁷ See Hudetz at col. 8, lines 53-64. The reference to records 61, 64 and 65 at col. 8, line 62 is believed to be in error, and should be 62, 64 and 66. (Reference numerals 61 and 65 do not appear in the Hudetz drawings.)



The secondary reference, Philyaw, is cited for ancillary teachings. However, the inadequacy of the appealed § 103 rejections is here established by the Office's factual errors concerning Hudetz's teachings alone.

3. Claim 1

Claim 1 relates to a method in which address information corresponding to one or more *anticipated* objects is sent to a device, based on knowledge of an object *already* presented.

One reason the rejection fails is because the cited art does not teach or suggest the italicized language, below

1. A method comprising:
 - (a) sensing an object identifier from a first object;
 - (b) sending said first object identifier from a first device to a second device;
 - (c) in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;
 - (d) initiating a link from the first device in accordance with said address information;
 - (e) at said second device, identifying additional objects related to said first object *but not having the same object identifier sent from the first device to the second device*; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;
 - (f) storing said additional address information in a memory at the first device;
 - (g) wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.

(Labels (a) – (g) are added to facilitate discussion.)

In the claimed arrangement, the “first object” may be a magazine ad for Marriot, and the “additional objects” can include ads in the same magazine for Nike and Reebok. Each ad is marked with an object identifier that permits identification of corresponding address information (e.g., URLs).

The claim requires that the object identifier for the “first object” (e.g., the Marriot ad) be sent to a second device (e.g., a database), which responds by sending address information (e.g., a Marriot URL) back to the originating device. The claim further requires that the second device (e.g., the database) identify additional objects related to the first object (e.g., other advertising in the same magazine issue) and send corresponding address information back to the originating device. The italicized language requires that these “additional objects” *not* have the same object identifier as was earlier sent to the second device (i.e., identifying the first object). That is, the Nike and Reebok ads have different identifiers than the identifier sensed from the Marriot ad and sent to the second device.

The Office states that Hudetz teaches such limitation.⁶⁸

Hudetz does not teach this claim limitation. As shown in his Figs. 4 and 5 (above), Hudetz presents “matching” records, i.e., those records where the UPC-A (or UPC-A plus UPC-

⁶⁸

June 15, 2006, Rejection, page 3, 2d-to-bottom line.

B) identifiers sent from the user device match identifiers in the database. When UPC-A data “31251” is sent, Hudetz’ system returns records 62, 64, and 66 – each of which shares this “31251” identifier. In contrast, the claimed arrangement may be viewed as involving “non-matching” identifiers.

Because Hudetz does not teach that for which it has been cited, the obviousness rejection fails.

A second reason the rejection fails is the limitation introduced by claim element (g). The claimed arrangement seeks to avoid delays associated with communicating between the first and second devices when a different object (e.g., the Nike ad) is sensed by the first device. Instead, of obtaining the address information corresponding to the Nike ad from the second device, it can be obtained from the memory of the first device (in which it was earlier stored, as a consequence of sensing an identifier from a Marriot ad).

Despite the Office’s statement otherwise,⁶⁹ Hudetz does not teach such an arrangement. If a barcode reading device is used to sense the UPC-A barcode from a can of Campbell’s Tomato Soup (prompting return of database records for all Campbell soups), and the barcode reading device is later used to sense the UPC-A barcode from a can of Campbell’s Chicken Noodle Soup, Hudetz does not teach how communications delays can be avoided. Instead, the full Hudetz procedure is apparently repeated. (Hudetz does not seem to contemplate this circumstance.) Thus, Hudetz does not teach that “if an object included among said identified additional objects is sensed by the first device” then communication delays are avoided. (The Office would be stretching too far in any interpretation that contended the user, himself, is the “first device.”)

Again, Hudetz fails to teach that for which it has been cited. The Office has failed to establish a *prima facie* case under § 103, and the rejection must be reversed.

⁶⁹ June 15, 2006, Rejection, page 4, lines 4-7.

4. Claim 3

Claim 3 is an independent system claim:

3. A system for linking from physical or digital objects to corresponding digital resources, comprising:
 - registration means for receiving data relating to an object, including its identity and owner, and associating same in a database with data relating to a corresponding response;
 - originating device means for sensing data from an input object, processing same, and forwarding same to a routing means;
 - routing means for processing the processed data from the originating device means, logging information from same, and forwarding at least certain of said processed data to a product handler means; and
 - product handler means for providing a response to the originating device means in accordance with the information provided thereto by the routing means.

One reason the rejection fails is because, contrary to the Office's statement,⁷⁰ Hudetz does not teach the "routing means..." limitation.

Since this claim element is in "means-plus-function" format, 35 USC §112, para. 6 comes into play, and the corresponding portion of the specification must be consulted.

Regarding the "routing means," the specification gives a variety of information, such as:

As more particularly detailed below, the handler 16 provides a response in accordance with the particular watermark payload. The response may be provided directly by the product handler to the device 12, or the handler may respond by communicating with a remote resource 18 (which may be, e.g., a data repository or service provider).

In the former case, the handler 16 may identify a URL corresponding to the watermark (using the database 17), and return the URL to the application 28c. Application 28c can then pass the URL to a web browser 28b in the device 12, and initiate a link to the internet site identified by the URL. Or the handler may have some locally stored data (e.g., audio or video, or software updates) and send it to the device 12 in response to the watermark.

In the latter case, the handler 16 does not respond directly to the device 12. Instead, the handler responds by communicating with a remote resource 18. The communication can be as simple as logging receipt of the watermark message in a remote repository. Or it can be to authenticate device 12 (or a user thereof) to a remote resource in anticipation of a further transaction (e.g., the communication can form part of an on-line licensing or digital rights management transaction). Or the communication

⁷⁰ June 15, 2006, Rejection, page 5, 2d-to-bottom paragraph.

can request the remote resource to provide data or a service back to device 12 or to another destination (e.g., to initiate an FTP file transfer, or to request that a song selection identified by the watermark be downloaded to a user's personal music library, or to update software installed on device 12).

In still other cases, hybrids of the two foregoing cases can be employed, e.g., handler 16 can send some data back to device 12, while also communicating with a remote resource 18.⁷¹

Claim 3 more specifically narrows this operation by specifying that the routing means forwards “at least certain of said processed data [i.e., data processed by the originating device] to a product handler means.” This claim is thus drawn to the “latter case” detailed in the specification, i.e., in which the router does not simply return a URL to the application 28c. Instead, the routing means forwards certain of the processed data to a product handler means.

Hudetz does not operate in this fashion. If the routing means in Hudetz is regarded to be the database table shown in his Fig. 4, information from this table is not forwarded to a product handler. Rather, as in the “former” case detailed in italics, above, information from his database table is simply returned back to the originating device (local host 28).

The Office’s reading draws no distinction between the “product handler means” and the “originating device;” it treats them as identical.⁷²

Accordingly, Hudetz does not teach the “routing means...” limitation. As such, the Office’s rejection – which is based on an incorrect understanding of Hudetz – fails.

A second reason the rejection fails is that, contrary to the Office’s assertion, Hudetz does not teach the “logging” limitation required by the “routing means.”

The Office cites records 62, 64, and 66 of Fig. 4 in support.⁷³ However, no “logging...” as required by the claim is taught.

Because the Office is incorrect in its statements of Hudetz’s teachings, the § 103 rejections based thereon fail, and must be reversed.

⁷¹ Specification, page 5, line 16 – page 6, line 9, emphasis added.

⁷² See, e.g., the Office’s statement that “local host 28” meets the “originating device” requirement, and that the “product handler means” comprises “local host computer 28...” (from citation to col. 9, lines 5-6: see June 15, 2006 Rejection at page 5, 5th line from the bottom).

5. Claim 4

Claim 4 depends from claim 3, and is similarly allowable. Claim 4 is also independently patentable. The claim reads:

4. The system of claim 3 in which the routing means includes means for checking information in the database.

(Support for this “means” limitation is found, e.g., under the heading “URL Performance Monitoring” at pages 23-24 of the specification, and by the hardware description of the routing means provided at page 5, lines 9-15.)

The Office cites Hudetz at col. 8, lines 47-53 for this limitation.⁷⁴ However, this excerpt does not teach the claimed limitation. Rather, it explains the data retrieval operation, in which records having UPC fields matching the input UPC data are retrieved from database 60.

Again, the art fails to teach that for which it is cited, and the rejection based on such misreading of the art must be reversed.

6. Claim 5

Claim 5 also depends from claim 3, and is similarly allowable. Claim 5 is also independently patentable. The claim reads:

5. The system of claim 3 in which the registration means includes means for generating an encapsulating file and means for distributing said file to predetermined parties.

Support for this “means” limitation is found, e.g., between page 13, line 3, and page 14, line 5.)

As detailed in the cited passage, the “encapsulating file” is a data structure in which registration information can be aggregated by the different parties involved (e.g., advertising

⁷³ June 15, 2006, Rejection, page 5, 5th line from the bottom.

⁷⁴ June 15, 2006, Rejection, page 13, lines 12-13.

agencies, magazine publishers, pre-press houses), and readily passed between such parties.

The Action cites Hudetz's Remote Nodes 24 and 26 (col. 5, line 48 – col. 6, line 6) as teaching such limitation. However, Hudetz does not so teach.

Hudetz' Remote Nodes 24/26 are locations identified by the URLs, where product-related information can be stored. (The database can also be stored there.) The cited text passage similarly concerns the URLs to which product UPC codes link.

Nothing in Hudetz teaches a “means for generating an encapsulating file” and “means for distributing said file...” as required by the claims.

7. Claim 17

Claim 17 is a Jepson-style independent claim drawn to a method in which address information corresponding to one or more *anticipated* objects is sent to a device, based on knowledge of an object *already* presented. The claim reads as follows (underlining added):

17. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming but that do not share with the first object the payload data with which the database was queried, and anticipatorily sending address information associated with such foreseen object payloads.

One reason the rejection is ill-founded is its requirement of “decoding … a machine readable feature.”

Admittedly, Hudetz's data entry can be by machine-decoding of a barcode, or by user entry of human-readable data printed next to the barcode. However, only in the latter case (i.e., when a user stops typing after just the UPC-A portion of the barcode) does Hudetz describe that his method provides information for any other objects.⁷⁵ This latter case does not meet the “decoding … a machine readable feature” requirement of the claim.

⁷⁵ Hudetz, col. 8, lines 34-53.

A second reason the rejection is ill-founded is that Hudetz does not have any teaching concerning “foreseeing information about object payloads that may be forthcoming.”

Hudetz is not concerned with foreseeing. He is concerned with providing information that matches identifying information provided to the system. If a user stops typing after just entering the UPC-A portion of the barcode, Hudetz may provide information for several products – all of which match the entered UPC-A portion. However, he is not doing this to serve *future* requests. Rather, he is doing it to be sure he answers the request made by the user.

A third reason the rejection is ill-founded is that, contrary to the Office’s statement,⁷⁶ Hudetz does not teach “*...object payloads that may be forthcoming but that do not share with the first object the payload data with which the database was queried.*”⁷⁷

As noted above in connection with claim 1, Hudetz’s arrangement is different. His specification teaches that the system returns *all* database entries (Fig. 4) having UPC data “that match the product identification number entered by the user.”⁷⁷ If the user enters just part of the product identification number (e.g., the manufacturer portion), then several URLs are returned. *However, all the returned URLs share the same data with which the database was queried.*⁷⁸ This is contrary to the claimed arrangement.

Again, *prima facie* obviousness has not been established, and the rejection must be reversed.

8. Claims 18 and 19

The patentability of claims 18 and 19 stands or falls with the Hudetz/Philyaw rejection of claim 17, from which they depend.

⁷⁶ June 15, 2006, Rejection, page 7, lines 9-10.

⁷⁷ Hudetz, 5,978,773, col. 8, lines 48-49.

⁷⁸ Hudetz, 5,978,773, col. 8, lines 53-64. In this example, the user enters the identification number “31251,” so plural records 62, 64 and 54 are returned to the user – since each of these records contains “31251.”

9. Claim 20

Claim 20 depends from claim 17, and is similarly allowable. Claim 20 is also independently patentable. The claim reads:

20. The method of claim 17 that includes foreseeing an order in which other object payloads may be forthcoming, and anticipatorily sending address information for such object payloads in said order.

The rejection is premised on the Office's view that Hudetz teaches this limitation.⁷⁹ However, Hudetz does not so teach.

The Office cites Hudetz at col. 9, lines 5-20. This passage concerns display of the retrieved information on the host computer 28, and user selection of a hyperlink to load a desired web page.

Hudetz does not teach "foreseeing an order" nor anticipatorily sending address information "... in said order."

Again, the art fails to teach that for which it has been cited. The rejection premised thereon thus fails and must be reversed.

10. Claim 21

Claim 21 depends from claim 20, and is similarly allowable. Claim 21 is also independently patentable. The claim reads:

21. The method of claim 20 in which said order is based on an order of printed pages in a bound volume.

The rejection is premised on the Office's view that Hudetz teaches this limitation.⁸⁰ However, Hudetz does not so teach.

The Office cites Hudetz at Fig. 7, and col. 10, lines 3-11. Fig. 7 shows a barcode on a can, a book, and a newspaper. The column text 10 simply describes the contents of Fig. 7.

⁷⁹ June 15, 2006, Rejection, page 14, lines 1-3.

⁸⁰ June 15, 2006, Rejection, page 14, lines 4-5.

Hudetz does not teach that the “order” required by claim 20 is based on an order of printed pages in a bound volume.

Again, the rejection is premised on a mis-reading of Hudetz and must be reversed.

11. Claim 22

Claim 22 depends from claim 17 and is similarly allowable. Claim 22 is also independently patentable. The claim reads:

22. The method of claim 17 that includes determining an order in which to send address information associated with said foreseen object payloads based on a contractual arrangement.

The rejection is premised on the Office’s view that Hudetz teaches this limitation.⁸¹ However, Hudetz does not so teach.

The Office cites Hudetz at col. 7, lines 17-27. This passage concerns the association of UPC data with corresponding URLs, and the criteria by which the association is made (e.g., manufacturer sponsorship of a web page).

Hudetz does not teach “determining an order... based on a contractual arrangement” as required by the claim.

Again, the Office has cited Hudetz for a teaching it does not contain. The rejection premised thereon thus fails and must be reversed.

12. Claim 23

Claim 23 is an independent claim modeled after claim 1. However, the following underlined limitation of claim 1 has been removed: “*identifying additional objects related to said first object but not having the same object identifier sent from the first device to the second device.*” A new limitation has been introduced – underlined below:

23. A method comprising:
 sensing an object identifier from a first object;
 sending said first object identifier from a first device to a second device;
 in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;
 initiating a link from the first device in accordance with said address information;
 at said second device, after initiating said link, identifying additional objects related to said first object; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;
 storing said additional address information in a memory at the first device;
 wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.

One reason the rejection of claim 23 fails is because, contrary to the Office' statement,⁸² Hudetz does not teach the underlined limitation.

In Hudetz's system, all database data matching the entered UPC data is returned from the database to the host computer 28 - *at the same time*. After it is returned and displayed, the user can link to a desired website by clicking on a URL. The specified data is not returned in stages, as claimed.

In contrast, Appellants' claimed invention returns the "additional address information" only "after initiating said link."

A second reason the rejection of claim 23 fails is because Hudetz does not teach the concluding "wherein..." requirement of the claim (discussed above in connection with claim 1).

Again, because Hudetz does not teach that for which it has been cited, the rejection fails and must be reversed.

13. Claim 24

Claim 23 is an independent claim modeled after claim 17. However, the following underlined limitation of claim 17 has been removed: "identifying additional objects related to said first object but not having the same object identifier sent from the first device to the second device." A new limitation has been introduced – underlined below:

⁸¹ June 15, 2006, Rejection, page 14, lines 6-7.

⁸² June 15, 2006, Rejection, page 8, last line.

24. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads after initiating said electronic link.

As with claim 17, one reason the rejection is ill-founded is its requirement of “decoding ... a machine readable feature.”

As noted, Hudetz’s data entry can be by machine-decoding of a barcode, or by user entry of human-readable data printed next to the barcode. But only in the latter case (i.e., when a user stops typing after just the UPC-A portion of the barcode) does Hudetz describe that his method provides information for any other objects.⁸³ This latter case does not meet the “decoding ... a machine readable feature” requirement of the claim.

As also noted in connection with claim 17, a second reason the rejection is ill-founded is that Hudetz does not have any teaching concerning “foreseeing information about object payloads that may be forthcoming.”

Hudetz is not concerned with foreseeing. He is concerned with providing information that matches identifying information provided to the system. If a user stops typing after just entering the UPC-A portion of the barcode, Hudetz may provide information for several products – all of which match the entered UPC-A portion. However, he is not doing this to serve *future* requests. Rather, he is doing it to be sure he answers the request made by the user.

A third reason the rejection is ill-founded is that Hudetz does not teach the underlined limitation, above.

Hudetz’s described method sends all matching address information from the database to the host computer 28, and the user thereafter links to a desired web site by clicking on a URL. No address information for object payloads that may be forthcoming is anticipatorily sent “after initiating said electronic link.”

Because the art fails to teach that for which it has been cited, the § 103 rejection must be reversed.

14. Claims 25 and 26

The patentability of claims 25 and 26 stands or falls with the Hudetz/Philyaw rejection of claim 24, from which they depend.

15. Claims 27-29

Dependent claims 27-29 are identical to claims 20-22, except that they depend from independent claim 24 instead of independent claim 17.

These claims are patentable for their dependence on claim 24. Additionally, these claims are patentable independently, for reasons given above in connection with claims 20-22.

16. Claim 30

Claim 30 is an independent claim modeled after claim 24 (and 17). However, the following underlined limitation of claim 24 has been removed: “anticipatorily sending address information associated with such foreseen object payloads after initiating said electronic link.” A new limitation has been introduced – underlined below:

30. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming, and the order in which said other object payloads may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads, in such order.

⁸³ Hudetz, col. 8, lines 34-53.

As with claim 24 (and claim 17), one reason the rejection is ill-founded is its requirement of “decoding … a machine readable feature.”

As noted, Hudetz’s data entry can be by machine-decoding of a barcode, or by user entry of human-readable data printed next to the barcode. But only in the latter case (i.e., when a user stops typing after just the UPC-A portion of the barcode) does Hudetz describe that his method provides information for any other objects.⁸⁴ This case does not meet the “decoding … a machine readable feature” requirement of the claim.

As also noted in connection with claim 24 (and 17), a second reason the rejection is ill-founded is that Hudetz does not have any teaching concerning “foreseeing information about object payloads that may be forthcoming.”

Hudetz is not concerned with foreseeing. He is concerned with providing information that matches identifying information provided to the system. If a user stops typing after just entering the UPC-A portion of the barcode, Hudetz may provide information for several products – all of which match the entered UPC-A portion. However, he is not doing this to serve *future* requests. Rather, he is doing it to be sure he answers the request made by the user.

A third reason the rejection is ill-founded is that Hudetz does not teach the underlined limitation, above.

Contrary to the Office’s assertion,⁸⁵ Hudetz does not teach “foreseeing … the order in which said other object payloads may be forthcoming.” Nor does Hudetz send address information “in such order.”

Because the art fails to teach that for which it has been cited, the § 103 rejection must be reversed.

⁸⁴ Hudetz, col. 8, lines 34-53.

⁸⁵ June 15, 2006, Rejection, page 12, lines 7-9.

VIII. CONCLUSION

The burden is on the Office to establish obviousness. By repeatedly mis-reading Hudetz, no *prima facie* case has been established.⁸⁶ All rejections should be reversed.

Date: May 17, 2007

CUSTOMER NUMBER 23735

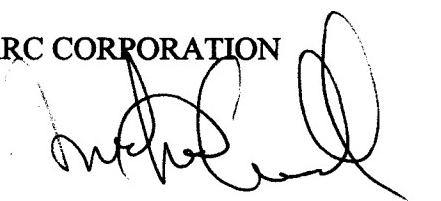
Phone: 503-469-4800
FAX 503-469-4777

Respectfully submitted,

DIGIMARC CORPORATION

By _____

William Y. Conwell
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⁸⁶ Because the Office has failed to establish *prima facie* obviousness, Appellants do not lengthen this brief by belaboring additional points concerning the art, the rejections, and the claims.

IX. PENDING CLAIMS APPENDIX

1. A method comprising:

sensing an object identifier from a first object;

sending said first object identifier from a first device to a second device;

in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;

initiating a link from the first device in accordance with said address information;

at said second device, identifying additional objects related to said first object but not having the same object identifier sent from the first device to the second device; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;

storing said additional address information in a memory at the first device;

wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.

3. A system for linking from physical or digital objects to corresponding digital resources, comprising:

registration means for receiving data relating to an object, including its identity and owner, and associating same in a database with data relating to a corresponding response;

originating device means for sensing data from an input object, processing same, and forwarding same to a routing means;

routing means for processing the processed data from the originating device means, logging information from same, and forwarding at least certain of said processed data to a product handler means; and

product handler means for providing a response to the originating device means in accordance with the information provided thereto by the routing means.

4. The system of claim 3 in which the routing means includes means for checking information in the database.

5. The system of claim 3 in which the registration means includes means for generating an encapsulating file and means for distributing said file to predetermined parties.

17. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming but that do not share with the first object the payload data with which the database was queried, and anticipatorily sending address information associated with such foreseen object payloads.

18. The method of claim 17 in which the physical object is a member of a logical set, and the method includes anticipatorily sending address information associated with other objects that are also members of said logical set.

19. The method of claim 18 in which the logical set comprises a set of advertisements found in a particular magazine.

20. The method of claim 17 that includes foreseeing an order in which other object payloads may be forthcoming, and anticipatorily sending address information for such object payloads in said order.

21. The method of claim 20 in which said order is based on an order of printed pages in a bound volume.

22. The method of claim 17 that includes determining an order in which to send address information associated with said foreseen object payloads based on a contractual arrangement.

23. A method comprising:

sensing an object identifier from a first object;

sending said first object identifier from a first device to a second device;

in response, at said second device, identifying address information corresponding to said first object identifier and sending same to the first device;

initiating a link from the first device in accordance with said address information;

at said second device, after initiating said link, identifying additional objects related to said first object; identifying additional address information corresponding to said additional objects; and sending said additional address information to the first device;

storing said additional address information in a memory at the first device;

wherein, if an object included among said identified additional objects is sensed by the first device, the corresponding address information can be retrieved from said memory in the first device without the intervening delays of communicating with the second device.

24. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads after initiating said electronic link.

25. The method of claim 24 in which the physical object is a member of a logical set, and the method includes anticipatorily sending address information associated with other objects that are also members of said logical set.

26. The method of claim 25 in which the logical set comprises a set of advertisements found in a particular magazine.

27. The method of claim 24 that includes foreseeing an order in which other object payloads may be forthcoming, and anticipatorily sending address information for such object payloads in said order.

28. The method of claim 27 in which said order is based on an order of printed pages in a bound volume.

29. The method of claim 24 that includes determining an order in which to send address information associated with said foreseen object payloads based on a contractual arrangement.

30. In a method of linking from physical objects to corresponding electronic resources, the method including decoding object payload data from a machine readable feature associated with a physical object, querying a database with at least some of said payload data to obtain address information associated with said physical object, and initiating an electronic link based on said obtained address information, an improvement comprising foreseeing information about object payloads that may be forthcoming, and the order in which said other object payloads may be forthcoming, and anticipatorily sending address information associated with such foreseen object payloads, in such order.

31. The method of claim 30 in which said order is based on an order of printed pages in a bound volume.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None